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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,517	04/05/2006	Kevin Blann	02814.0080-00000	4811

22852 7590 03/02/2007  
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EXAMINER
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LU, C CAIXIA

ART UNIT	PAPER NUMBER
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1713

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/02/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/539,517

Applicant(s)

BLANN ET AL.

Examiner

Caixia Lu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____                                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/17/05</u> .   | 6) <input type="checkbox"/> Other: ____                           |

## DETAILED ACTION

### *Claim Objections*

1. Claims 1-45 are objected to because of the following informalities: the fond size should be "12" throughout the text. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 29, in the 4<sup>th</sup> line from the end of the claim, the term "on" should be replaced with "in" since the substituents is a part of the R<sup>1-4</sup> group rather than additional part of the R<sup>1-4</sup> groups.

Claim 7, bridging the last two lines, the term aromatic hetero hydrocarbyl group lacks definition.

Claims 10 and 32, (i) the nomenclatures of "1,2-ethane", "1,2-propane", "1,2-catechol", and "1,2-dimethylhydrazine" are improper and they should be replaced with "1,2-ethylene", "1,2-propylene", "1,2-catecholate", and "-(CH<sub>3</sub>)N-N(CH<sub>3</sub>)-" respectively; and (ii) the term "and" before "a substituted heterohydrocarbyl" and "-N(R<sup>5</sup>)-" respectively should be replaced with "or" to be logical.

Claims 17 and 37, (i) in line 5, "N<sup>2</sup>" should be "N<sub>2</sub>"; (ii) in line 7, the nitrogen in "N" only have two bonds, should "N" be "NH" instead?; (iii) 4<sup>th</sup> line from the end of the

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claim, compounds "(2-thiophenyl)<sub>2</sub>P-N(methyl)P(2-thiophenyl)<sub>2</sub>" and "(phenyl)<sub>2</sub>P(=S)N(isopropyl)P(phenyl)<sub>2</sub>" lack antecedence and should be deleted; and (iv) the 3<sup>rd</sup> and 2<sup>nd</sup> compounds from the end of the claims is informal, appropriate corrections are requested.

Claim 25, in line 2, the phrase "the transition metal from" should be deleted because it is the transition metal compound as whole is combined with the ligand compound.

Claim 26, (i) in line 2, in order to have logic follow, the term "further" should be inserted in the front of "includes"; and (ii) in line 4, the term "tetrafluoroboric acid etherate" is not and art recognized term.

Claim 43, in line 2, in order to have logic follow, the term "further" should be inserted in the front of "includes".

### ***Specification***

4. The disclosure is objected to because of the following informalities: similar informalities as shown in above claims rejection can also be found in the corresponding text in the specification and appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claims 1-26 and 29-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato et al. (JP 07215896).

The catalyst of all of the instant claims read on the broad limitation of a catalyst composition comprising a transition metal compound and a heteroatomic ligand of formula  $R_nA-B-CR_m$ , wherein A and C are oxygen and B is a linking group and R groups are a hydrocarbyl group.

Sato teaches the tetramerization of ethylene in the presence of a catalyst composition comprising a chromium compound, an electron donating agent such as dimethoxyethane ( $CH_3OCH_2CH_2OCH_3$ ), and an aluminum alkoxide. Sato's catalyst composition and tetramerization process thereof meet the limitation of the instant claims.

7. Claims 29, 31, 32, 34-36 and 38-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Dixon et al. (US 2005/0119516).

Dixon's trimerization catalyst of Example 3 and 4 comprising  $CrCl_3[bis(HN(CH_2CH_2P(Ph)_2)_2)]$  and aluminoxane meets the limitation of the instant claims.

### ***Double Patenting***

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

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1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-45 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-55 of copending Application No. 10/539,237. Although the conflicting claims are not identical, they are not patentably distinct from each other because the difference in the R groups in the ligand compounds of both sets of claims can be obvious variation to each other. Although the instant claims do not expressly limit the R group to contain a polar substituents, however, since the substituents is either polar or nonpolar, one would immediately envision the R group to contain a polar substituents. When the R group contains a polar substituent, the instant claims overlap with the claims of Application No. 10/539,237.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106.

The examiner can normally be reached from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.

A handwritten signature in black ink, appearing to read 'Caixia Lu', is positioned above the printed name and title.

Caixia Lu, Ph. D.  
Primary Examiner